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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/651,913 | 08/29/2003 | Eric Tan Swee Seng | 108298733US | 9569 |

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EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT PAPER NUMBER

2826

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/651,913

Applicant(s)

SENG ET AL

Examiner

Alexander O. Williams

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9 and 11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/28/05
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Serial Number: 10/651913 Attorney's Docket #: 108298733US

Filing Date: 8/29/2003;

Applicant: Seng et al.

Examiner: Alexander Williams

Applicant's election of the species of figures 1A-5A (claims 1 to 7, 9 and 11) filed 9/9/05, has been acknowledged.

This application contains claims 8 and 10 drawn to an invention non-elected without traverse.

Claims 12-45 have been cancelled.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

3f

Claims 1 to 7, 9 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by King et al. (U.S. Patent # 5,677,566).^{3f}

1. King et al. (figures 1 to 8) specifically figure 8 show a microfeature device package system **10**, comprising: a microfeature device **14**;

a plurality of device contacts **18** electrically coupled to structures within the microfeature device;

a conductive structure **15** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first and second package contacts **34** accessible for electrical coupling to at least one device external to the package, the first package contacts being accessible from a

first direction for coupling and the second package contacts being configured to receive solder balls 28 and being accessible from a second direction for coupling, the second direction being opposite the first direction; and an encapsulant 26 disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures with aperture walls aligned with the second package contacts to contain solder balls carried by the second package contacts.

2. The system of claim 1, King et al. show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers 13, wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

3. The system of claim 1, King et al. show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.

4. The system of claim 1, King et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

5. The system of claim 1, King et al. show wherein the first package contacts are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.

6. The system of claim 1, King et al. further comprising solder balls disposed on the second package contacts.

7. The system of claim 1, King et al. show wherein the conductive structure includes a leadframe attached to the microfeature device, and wherein the leadframe includes a

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plurality of elongated leadfingers **13**, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded **22** to at least one of the device contacts, each leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball to make electrical contact with a second type of external device.

9. The system of claim 1, King et al. further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board (inherent) having circuitry electrically coupled to of the first package contacts or the second package contacts.

11. The system of claim 1, King et al. show wherein the microfeature device includes a memory chip.

Claims 1-7, 9 and 11 are rejected under 35 U.S.C. § 102(e) as being anticipated by Koon et al. (U.S. Patent # 6,836,009 B2).

1. Koon et al. (figures 1 to 10) specifically figure 6 show a microfeature device package system **110**, comprising: a microfeature device **112**;

a plurality of device contacts (**inherent connected to 130**) electrically coupled to structures within the microfeature device;

a conductive structure **120** electrically connected to at least one of the plurality of device contacts, the conductive structure having a plurality of first and second package contacts accessible for electrical coupling to at least one device external to the package, the first package contacts being accessible from a first direction for coupling and the second package contacts being configured to receive solder balls **182** and being accessible from a second direction for

ling, the second direction being opposite the first direction; and

an encapsulant **142** disposed adjacent to the microfeature device and the conductive structure, the encapsulant having apertures with aperture walls aligned with the second package contacts to contain solder balls carried by the second package contacts.

2. The system of claim 1, Koon et al. show wherein the conductive structure includes a leadframe having a plurality of elongated leadfingers, and- Wherein the first package contacts includes generally flat, elongated surfaces of the leadfingers, and wherein the second package contacts include end surfaces of the leadfingers.

3. The system of claim 1, Koon et al. show wherein the microfeature device has an at least generally planar first surface facing in the first direction and an at least generally planar second surface facing in the second direction, and wherein the plurality of device contacts are positioned at least proximate to the second surface.

4. The system of claim 1, Koon et al. show wherein the first package contacts are arranged in a first pattern, and wherein the second package contacts are arranged in a second pattern different than the first pattern.

5. The system of claim 1, Koon et al. show wherein the first package contacts are arranged adjacent to a periphery of the package, and wherein the second package contacts are arranged in an array with at least some of the second package contacts spaced apart from the periphery of the package.

6. The system of claim 1, Koon et al. further comprising solder balls **182** disposed on the second package contacts.

7. The system of claim 1, Koon et al. show wherein the conductive structure includes a leadframe attached to the microfeature device, and wherein the leadframe includes a plurality of elongated leadfingers **122a**, with each leadfinger having a first end portion positioned to make electrical contact a first type of external device, each leadfinger further having a second end portion wirebonded to at least one of the device contacts, each

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leadfinger still further having an intermediate portion between the first and second end portions, the intermediate portion carrying a solder ball to make electrical contact with a second type of external device.

9. The system of claim 1, Koon et al. further comprising the device external to the package, and wherein the device external to the package includes a printed circuit board (see figure 4) having circuitry electrically coupled to of the first package contacts or the second package contacts.

11. The system of claim 1, Koon et al. show wherein the microfeature device includes a memory chip.

The listed references are cited as of interest to this application, but not applied at this time.

| Field of Search | Date |
|---|--------------------------|
| U.S. Class and subclass: 257/E23.004,23.068,25.023,684,666,673,698,691,690,692 ,693,696,775,776,784,786,787,796 | 4/2/06 16 .7 |
| Other Documentation: foreign patents and literature in 257/ E23.004,23.068,25.023,684,666,673,698,691,690,692,693 ,696,775,776,784,786,787,796 | 4/2/06 1C 15 .7 |
| Electronic data base(s): U.S. Patents EAST | 4/2/06 T |

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ny inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O. Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30AM-7:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Alexander O Williams
Primary Examiner
Art Unit 2826

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